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ABSTRACT

Speech communication and journalism instructors should be aware of how computers are used in the mass media and what role computer systems can play in broadcast education. Many radio and television stations commonly use computers for accounting and business functions, and they are beginning to expand their computer operations to program logs and the composition and editing of news stories. The classroom applications of computers include using packaged programs, such as the Statistical Package for the Social Sciences (SPSS), for learning methods of statistical analysis on which more and more media operations depend. Computers can be used in other class activities to simulate the ways these tools are used in actual media operations. One of the more popular computer systems used by noncomputer science departments is PLATO, a very structured learning system of programed instruction that works well for many types of self-paced materials. Other computer programs that can be helpful to the faculty member include programs for grading exams, programs that monitor student progress, and programs that keep student records. (RL)

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THE USE OF COMPUTERS IN BROADCAST EDUCATION[1]

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Computers and computer applications are becoming more and more an integral part of business as well as our personal lives. Radio and television broadcasting is no exception. This paper will briefly describe some of the ways computers are used in radio and television today, and what role computer systems can play in broadcast education.

Probably the most important consideration is why computer assisted instruction (CAI) should be used in broadcast education courses. Many radio and television stations today are using computer systems in day-to-day operations. Most commonly computers are used for accounting and business functions, but they can also be tied into a traffic department, thus providing not only program logs but also a record of the station's billings. Some systems can prevent unwanted commercial adjacencies, such as running commercials for two competing brands of automobiles back to back.

Some newsroom operations are becoming computerized. At least two companies are advertising nationally for television news systems, similar to those now used in newspaper operations. With a computerized system, the reporter composes and edits the story on a video terminal instead of a typewriter. The terminals can "talk" to each other, can recall stories previously written, and can print the copy or transfer it directly to a prompter screen in the television studio.

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Record and tape libraries can be computerized. William L. Hagerman, now at the University of Southwestern Louisiana, has proposed a standardized data input format for radio stations. Hagerman notes that with such a system "radio stations with vast collections of records could easily access music of specific types, by given composers, by particular artists, of exact lengths"[2] and more.

Some videotape editing systems involve some form of computer control. Edit decisions can be made "off-line" using small format videotape recorders and work tapes. The edit codes, transferred by paper tape or terminal, are then used to control automatically the editing process with the master tapes.

For those who go on to graduate work, the computer is quite likely to be an important tool. Much research at the graduate level today makes use of computers for at least the analysis of statistical data.

There is no doubt that computers can be utilized in the classroom both for undergraduates and graduates. Let us examine now some of the classroom uses available, from the point of a computer user rather than a programmer.

One of the first applications to come to mind is probably that just mentioned, statistical analysis. There are several packaged programs available for use with statistical data. One of the more widely used is SPSS, Statistical Package for the Social Sciences.[3] A packaged program is a computer program that requires the user to supply a small amount of information to tell the program what to do with his or her data. Once the data is described by a few statements, it is very easy to perform any of a number of statistical tasks within the program.

SPSS is a very powerful statistical tool. The program can provide rather complex analyses, and without some care in its use, can very easily provide a user with hundreds of pages of invalid or inappropriate statistics. However, its relative simplicity makes it valuable for use with a course in broadcast research at the undergraduate or graduate level.

For example, one important part of a course in broadcast research might be concerned with radio and television ratings, how they are obtained, and their validity. Students in such a course could be required to perform a ratings study, or research, in partial fulfillment for credit. Students could set up a consulting firm within the course structure. That consulting firm would then be responsible for meeting with local radio or television station management to propose a listening or viewing survey. With some encouragement, and with an understanding that there will be no cost to the station, it should not be difficult to find a client.

It is important that students in this type of project be more than just telephone surveyors or interviewers. The students must run the project from the first interview with management, to determine the range of the survey, through the construction and testing of the survey instrument to the final data preparation and running of the computer program. Only through thorough participation can the students have a valuable learning experience. Of course any experience of this nature should be prefaced with a basic introduction to statistics and how they can be used. Under the proper supervision of an instructor, both the client and the

students can benefit--the client receiving valuable information about the station, the students receiving a viable educational experience.

Incidentally, there are some advantages as well as disadvantages to using a telephone survey technique. One particular disadvantage is that a random sample of numbers from a telephone directory may be biased against certain high income groups who have unlisted numbers, or in the case of a college community, against many students who move in and out regularly and are not listed in the directory. Computers can be put to use here as well. A former member of the mathematics department at Indiana-Purdue wrote a program to generate a random list of telephone numbers. This list has enough numbers to provide 800 completed surveys. The telephone numbers are distributed so that the sample of 800 will represent proportionately the number of telephones in each of the exchanges in the Fort Wayne calling area. Through testing it has been found that the computer generated list does provide a good random sample of the population in terms of sex, race, and economic status.

A similar type of class project is "Rerun: A Television Simulation" designed by Philip A. Gray at Northern Illinois University. As stated by Gray, "the simulation has as its objectives: to provide a context for students to understand some of the principles of mass communication, and in which they can develop a perspective on television as a medium of mass communication; to provide an opportunity for students to participate in communication activities similar to those associated with commercial mass media operations; to encourage students to explore alternative communication techniques and strategies to those dominant in the commercial

media; and to increase student awareness of some of the issues and effects associated with the medium of television."[4] As Gray has devised the project, a specially written computer program can be used to statistically analyze the data generated in the simulation. Here again the students can receive a valuable introduction to the use of computers and the interpretation of computer analyses.

Computer programs can be designed to generate programming logs similar to those found in many radio and television stations. Such a logging system has been used in a television production class at Indiana-Purdue. One comment frequently heard from broadcasters is that radio and television graduates often have little concept of timing or deadlines. Programming logs can be used in a television production lab to provide a more realistic setting to force students to be concerned with program lengths and deadlines. For certain productions, the students are required to follow the log, as though he or she were on the air. A videotape machine is used for playback of a previously recorded program, which the student must follow with a station break, his or her production (produced "live"), followed by another station break, a public service announcement and the next pre-recorded program, all according to the times specified on the log.

A computer is not essential for this type of project. However, with a program available to produce the necessary format, it does save time in the long run by making it unnecessary to retype each week's logs and also to provide sufficient copies of the log for the class.

The original computer program which produced the logs was designed for the Instructional Television Division at Indiana University at

Bloomington by three students in a two-semester computer science course. The computer program as designed provided the ITV Division with not only a system for generating programming logs, but also an information retrieval system, one which could quickly provide information on which television programs were sent via closed circuit to each of the 16 locations in the state network, and to the various rooms on the campus, as well as when the programs were transmitted along with other information. The students wrote a computer program which would take information typed on a terminal, store it on magnetic tape, provide each days logs, and provide summaries of any one of 13 different items from past logs when requested.

One of the more popular computer systems used by non-computer science departments is PLATO. Since PLATO is a very structured system of programmed instruction, it can work well for many types of materials that lend themselves to self-pacing. Most of the lessons available on the PLATO system at Indiana-Purdue relate to the sciences--physics, chemistry, medicine and so on. There is one program on the Indiana-Purdue system dealing directly with broadcasting. It is a lesson for students in broadcast management. Here the student is given the job of managing a radio station which has been established in a ficticious market. The lesson is designed to assist the student in programming the station, hiring and firing people, dealing with the FCC, selling commercials, keeping the books and so on. Throughout the lesson, PLATO keeps track of the results and can provide a summary of the station's financial condition at any time.

To begin, the student asks PLATO to provide information about the

station he or she will operate and about the market; the student is provided information about the competition, reviews some sales concepts, is requested to set spot rates for the station (with some helpful hints from PLATO) and finally is requested to hire employees and provide an estimate of annual operating expenses for nearly every expense category that would be found at a commercial station.

At any point in this lesson--the student can gather additional information, or call for help, which the lesson provides (and which is charged against the station's budget as a consulting fee). The student can begin station operation at any time after certain items have been completed. The system is programmed to provide hints if a student gives wrong answers, and in fact will prompt and finally give the correct answer if the student continues to be wrong.

During the station operation, specific problems are thrown at the student, such as a union strike and settlement, or music license negotiations, which can lower the station's operating income. The student can go through the lesson a number of times, changing music formats, station size, or other factors. In short, the lesson on this computer system can give the student a feel for some of the complex inter-related problems faced in day-to-day station operation.

The PLATO system can be programmed to provide a lesson in a subject such as television directing. With the graphics capabilities of the PLATO screen, a switcher can be diagrammed, floorplans can be drawn and modified by the student, and even proper framing of camera shots can be demonstrated. The possibilities are many and varied.

A programmed system similar to PLATO is available on some computer installations. The system, called Multitutor accepts much of the PLATO language, but runs on a range of computer terminals from the PLATO terminal itself through CRT's and printing terminals. One disadvantage is that the graphics capability is lost when a CRT or printing is in use.

An interesting computer program which produces a word puzzle was written by Charles Mustain.[5] This program was designed specifically for small computer systems. It will take a list of words, designated by the user and typed on a terminal, and compose a puzzle with those words. The program can variously provide a list of words included in the puzzle, and will, upon request, print a puzzle solution. It can be a handy tool for helping students become familiar with vocabulary and/or television, radio and film production terms.

Other computer programs which can be helpful to the faculty member include the many types of exam grading programs, which provide statistics along with the returned grades, and other computer programs which can keep track of individual student's grades and compute a final course grade automatically.

The preceeding are but a few of the types of computer programs which could be used in the radio-television-film curriculum. It may be that the faculty or students in a local computer science department could write programs to specifically fit the needs of a particular teaching situation. Other sources of computer programs include indexes and descriptions of educational software, available in many computer centers.

Computers can be a valuable tool in radio and television education. But computers are just that, a tool, no different than a slide projector

or a videotape machine. Computers can be used as much or as little as needed within a curriculum. And just as it is not necessary to be a photographer to use slides in a class, or to be a television director to use videotaped material, it is not necessary to have computer training to use computers in educational settings. Each individual faculty member must make his or her decision whether or not to make use of computer programs, but each should at least be aware of the possibilities.

Footnotes

[1]Originally presented at the National Association of Educational Broadcaster's convention, Chicago, Nov. 13, 1979.

[2]William L. Hagerman, "Computers in Broadcasting...," Feedback, February, 1979, pp. 12-14.

[3]See Norman H. Nie et al., Statistical Package for the Social Sciences, (New York: McGraw-Hill, Inc., 1975).

[4]Philip A. Gray, "Mass Communication Alternative--Television Programming Simulation," Feedback, February, 1979, pp. 7-10.

[5]Charles Mustain, "Eduwords - A Word Puzzle," EDU, Spring, 1979, pp. 15-16.